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STEPANOV, G.K.

Stepanov, G. K.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Electrochemistry

⑤.9
The work function of mercury in an atmosphere of water vapor. S. V. Karpachev, M. V. Smirnov, Z. S. Volchenko, and G. K. Stepanov (Inst. Chem. and Met., U.S.S.R. Acad. Sci., USSR R. Sverdlovsk). *Zh. Fiz. Khim.* 27, 1370-3 (1953); cf. C.A. 48, 1100b. — The work function of Hg in the presence of H₂O vapor (or this vapor and H₂) is greater than in *vacuo* as long as the adsorbed amt. of H₂O is less than 15×10^{-11} mole/sq. cm. At 10^{-11} mole/sq. cm. the difference has a max. (approx. 1.1 e.v.) which is too great to be accounted for by the orientation of adsorbed H₂O dipoles. The p.d. between Pt in *vacuo* and Pt in H₂O vapor (whose pressure varied from 5×10^{-4} to 2×10^{-3} mm. Hg) is independent of the vapor pressure and decreases from 0.47 v. at 150° to 0.1 v. at 350° and zero at 550°. J. J. Bikerman.

S 4700

31672
S/631/60/000/001/010/014
B110/B102

AUTHOR: Stepanov, G. K.

THE PROBLEM OF ELECTROLYTIC DISSOLUTION OF GASES IN POROUS
GAS ELECTRODES. Method and apparatus

SOURCE: Elektrokimiya rasplavlennykh solevykh i tverdykh elektrolitov.
no. 1, 1960, 65 - 71

TEXT: A method suggested by B. V. Deryagin et al. (Opredeleniye udel'noy poverkhnosti poroshkoobraznykh tel po soprotivleniyu fil'tratsii razrezhennogo vozdukha (Determination of the specific surface area of powdery substances from the filtration resistance of rarefied air) M. Izd-vo AN SSSR 1957) was used for testing porous powder-metallurgically produced gas electrodes. Measurement of the resistance to filtration allows the *specific surface area and gas penetrability* of the electrode to be determined before immersion into the electrolyte. Their knowledge allows the calculation of the mass transfer of gas into the reaction zone and of the current density on the electrode. For inelastic collisions between gas molecules and wall, B. V. Deryagin derived the equation

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The problems of electrolytic...

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$Q = (24/13)\sqrt{2/\pi} \cdot (\delta^2 \cdot \Delta p) / (S_0 \sqrt{MRT} \cdot \Delta x)$, where Q is the number of air molecules passing per sec through 1 cm^2 of a porous partition wall $\Delta x \text{ cm}$ thick in both directions, with a pressure drop of $\Delta p (\text{dyn/cm}^2)$; S_0 is the specific surface area (in cm^2 or cm^3 of the porous substance); δ is the porosity given as ratio between pore volume and total volume; M is the mean molecular weight of air or gas in g/mole. The permeability is

$P = Q / [\Delta p \sqrt{1/(2\pi MRT)}] = 486^2 / 13 S_0 \Delta x$. Hence it follows that $S_0 = 486^2 / 13 P \Delta x$.

Applied to practical work with a rheometer and a rotameter, $\bar{r} = Q / [S \Delta p \sqrt{1/(2\pi MRT)}]$ is valid, where Q is given in g/sec, S is the cross section area of the sample in cm^2 , $\delta = 1 - W/\rho V$, where W is the sample weight; ρ is the density of the sample, and V is the sample volume. The porosity can also be determined gasometrically on the basis of the Boyle-Mariotte law according to L. F. Leonov (Novyy metod i pribor dlya opredeleniya poristosti sypuchikh i tverdykh tel (New method and apparatus for determining the porosity of loose and solid materials). Sbornik trudov In-ta fizicheskoy khimii AN SSSR, VI, 146, 1959). First, the permeability P_1 is measured

for p_1 , and P_2 for p_2 ; then the viscous flow is calculated as follows:
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The problems of electrolytic...

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$$VF = \left\{ (P_{\bar{p}_2} - P_{\bar{p}_1}) / [(P_{\bar{p}_2} - P_{\bar{p}_1}) P_{\bar{p}_1}] \right\} \cdot 100\%.$$
 The measuring device is a simplified model of that suggested by B. V. Deryagin et al. (Novyye metody fizikokhimicheskikh issledovaniy (New physicochemical methods of investigation). Sbornik trudov In-ta fizicheskoy khimii AN SSSR, VI, 131, 1958). For measurements at pressures > 1 atm, the device was modified. Thus, the corrosion resistance of porous substances in melts can be determined when an inert gas (Ar, He) is blown through the sample. It is possible that (1) the pressure drop decreases with time, the material corrodes, and the corrosion products dissolve in the melt; (2) the pressure drop decreases with time, the material corrodes, and the corrosion products are deposited in the pores; (3) the pressure drop varies with time, corrosion does not occur or takes place without affecting the pore size. There are 3 figures and 8 references: 5 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: F. T. Bacon. J. Beama, 61, no. 199, 6 - 12, 1954; F. T. Bacon, I. S. Forrest The Engineer, 202, no. 5243, 93, 1956.

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54700

S/631/60/000/001/011/014
B110/B102

AUTHORS: Stepanov, G. K., Arkhipov, G. G., Trunov, A. M.

TITLE: Corrosion tests of porous samples in melts by the method of gas permeability

SOURCE: Elektrokhimiya rasplavlennykh solevykh i tverdykh elektrolitov, no. 1, 1960, 73 - 77

TEXT: In such corrosion tests, the gas permeabilities of porous Ni samples immersed in carbonate and chloride melts are periodically measured, their dependence on the immersion time is determined, and the corrosion processes are judged from their change. This simple method is especially suited for qualitative corrosion tests of porous electrodes of heating elements, since it yields reliable curves on the corrosion in the melt. Its sensitivity depends on the mean pore size and thus on the permeability. The gas purified from oxygen impurities by Ca heated in a tube to 700°C had a constant excess pressure of 2 at. The cell consisted of a quartz tube with a corundum crucible containing the melt. The sample was immersed into the melt by means of a special Ni holder. Ni powder (grain Card 1/3

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Corrosion tests of porous samples...

size: 0.16 - 0.50 mm; sieve analysis), obtained from nickel oxide by hydrogen reduction at 700°C, was pressed to samples at 1.6 t/cm². The samples were first sintered in an H₂ stream at 1000°C. Embedded in a holder with a paste of fine Ni powder and glycerin, they were sintered on the holder at 1000°C for 30 min. The sintering temperature was 1000°C, since the test in the melt was made at 700 - 800°C. After 2 - 3 min immersion of the holder in the melt, the microtap which serves to fill the sample pores with the melt was closed, and the connection to the air was opened. The gas consumption was determined from the period required for filling the pores. Further measurements were made at a constant pressure. The pressure drop at the beginning of the experiment was measured with a manometer by adjusting the microtap; the change in gas consumption was regulated by a rheometer. The bulk of the melt was probably removed within 1 - 2 min. The rest is practically not removed, since after the drop the pressure remained constant. The permeability was calculated from $P_{\text{mean}} = Q / [S \Delta p \sqrt{M / 2 \pi R T}]$ where P_{mean} is the gas permeability, M the molecular weight (g/mole), S the cross-sectional area of the sample (cm²), Q the gas flow rate through all sample cross sections (g/sec),

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Corrosion tests of porous samples...

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Δp the pressure drop on the sample (bar). $P_{p_m} = K \cdot Q$ with $K = 1/(S \Delta p \sqrt{2\pi RT})$

holds for constant pressure drop, temperature, and sample cross section. The melting temperature of the ternary eutectic mixture K_2CO_3 - Na_2CO_3 - Li_2CO_3 was $700^\circ C$ with He, and that of an equimolecular KCl-NaCl mixture was $800^\circ C$ with Ar. In the carbonate melt, a dense, clearly visible film grows on the pore surface, which covers the pores and makes the sample practically gas tight. In the chloride melt, however, the pore walls dissolve, the gas permeability increases with time, and fine-disperse, light-green, powdery nickel oxide precipitates. Since the change in permeability can be expressed in % the corrosion behavior can be determined rapidly and reliably. Thus, slow corrosion can also be studied with fine-disperse samples. There are 4 figures, 2 tables, and 3 Soviet references.

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22343

S/200/61/000/004/003/005
D228/D305

AUTHORS: Ivanovskiy L. Ye., Stepanov, G. K., Krasil'nikov, M. T.,
and Petenev, O. S.

TITLE: Study of the electrolytic solution of chlorine and
hydrogen chloride on inert electrodes

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya,
no. 4, 1961, 48-53

TEXT: In order to obtain alkali and alkaline earth metals by
electrolysis from their fused salts, it is necessary in most cases
to maintain an optimum range of concentration during the process.
As building up and maintenance of the necessary concentration via
porous diaphragms represent difficulties, it was proved in this
work that this can be solved by using gas electrodes especially
the chlorine electrode. This involves a rapid cathodic solution
of chlorine which prevents the depositing of the metal and this in
turn compensates for the lowering of the metal's ionic concentration.
The purpose of this work was to study the behavior of the gas elec-

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Study of the electrolytic solution...

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D228/D305

trodes namely: chlorine and hydrogen chloride cathodes from graphite (or carborundum) in electrolysis of fused alkali chlorides. The use of gas electrodes can compensate for a lowering below the optimum range of the ionic concentration of the deposited metal. Graphite anode and cathode, porous electrode, and a Pb reference electrode were immersed in an electrolyte of unimolecular quantities of fused sodium and potassium chlorides at 800°C through which chlorine or hydrogen chloride was passed for 3 - 4 hours. When the potential reached the steady value, the cathode polarization for the range of current densities from 10^{-3} to 3 amp/cm² was measured by means of an oscillograph at the moment the current was cut off. Polarization measurement was conducted on a graphite electrode and a porous electrode which was a "silite" tube through which chlorine or hydrogen chloride was passed into the electrolyte. The results are given in Fig. 2. The curves represent the dependence of cathode potentials on current density (abscissae - cathode potentials; ordinates - log current density in amp/cm²). Curve 1: In the electrolyte saturated with chlorine. (The first part of the curve, up to the current density of 10^{-2} represents the cathode polarization of

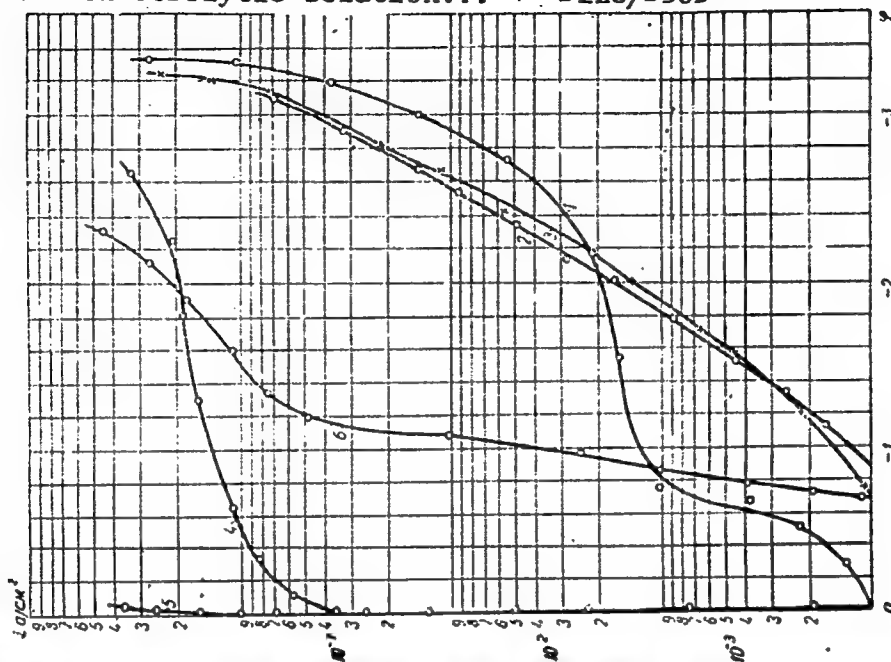
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Study of the electrolytic solution..... S/200/61/000/004/003/005
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FIG. 2

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Study of the electrolytic solution...

dissolved chlorine due to concentration changes in the vicinity of the electrode (not to the ionization of chlorine $\text{Cl} + e \rightarrow \text{Cl}^-$). Solubility of Cl_2 in fused $\text{KCl} + \text{LiCl} = 0.0038\%$ by weight obtained after 5 hours (after 1 hour it was 0.0013% which shows the speed of solubility)). Curve 2: In the electrolyte saturated with hydrogen chloride (solubility of HCl at $800^\circ\text{C} = 6.8 \cdot 10^{-4}\%$ by weight). The potential of the HCl electrode was less than that of the chlorine electrode by 0.7 v. Curve 3: In fused $\text{KCl} - \text{NaCl}$ not saturated with Cl_2 or HCl it practically concurs with Curve 2. Curves 4 and 5: On the porous "silite" electrode through which chlorine was passed. In the case of Curve 4 the chlorine used up 4 g/hr in $60 - 70 \text{ g}$ of electrolyte. Ionization of chlorine takes place without polarization over a wide range of current density. Curve 5 shows that for a higher amount of chlorine passed, higher current densities can be applied - although this results in greater loss of chlorine. The use of a porous electrode facilitates the ionization process. It can be assumed that cathodic ionization of chlorine is due to adsorption of gas on the electrode. With a fine porous electrode due to a larger electrochemically active surface and due to the pres-

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Study of the electrolytic solution...

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sure of gas passing through the pores, the ionization rate is greater and consequently the current density range can be increased.

Curve 6: On the porous electrode through which HCl was passed. (Small polarization due to diffusion and due to the evolution of hydrogen). The authors conclude that in fused alkali chlorides saturated with chlorine or hydrogen chloride, there is high concentration polarization. When porous electrodes with gas passing through their pores are used, the process of solution of chlorine takes place without polarization and that of hydrogen chloride with small polarization and with a potential lower than that of a chlorine electrode by 1 v. The use of the chlorine electrode is indicated although the hydrogen chlorine electrode is convenient to use in the case of electrolysis of salts of low-valent metals due to its lower potential. It is found that the highly porous electrodes of graphite or carborundum with chlorine or hydrogen chloride passing through them work efficiently in the preparation and purification of metals by electrolysis of their fused salts. It was also found that the chlorine electrode can be used in high temperature electrochemical generators. There are 2 tables, 2 figures and 11

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Study of the electrolytic solution...

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references: 8 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: R. Piontelli and G. Steruheim, J. Chem. Phys., 23, 1771 (1955), R. Piontelli, G. Steruheim and M. Prancini, J. Chem. Phys., 24, 1113 (1956), J. M. Mellor, Inorg. and theoretical Chemistry, vol. 2, 1927, p.146. ✓

ASSOCIATION: Ural'skiy filial AN SSSR, Sverdlovsk (Ural Branch, AS USSR, Sverdlovsk)

SUBMITTED: April 1, 1960

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S/200/61/000/006/002/004
D206/D303

AUTHORS: Stepanov, G.K. and Trunov, A.M.

TITLE: Electroconductivity of the system NiO - Li₂O in the temperature range from 20 to 900°C

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya, no. 6, 1961, 67-70

TEXT: The authors describe electrical conductivity experiments performed on nickel oxide specimens with differing lithia content in the temperature range 20 - 900°C and discuss the obtained results. Their work is a continuation of the initial research by Ye. Fervey (Ref. 1: Okisnyye poluprovodniki (Oxide Semiconductors), Sb. Poluprovodnikovyye materialy (Coll. Semiconducting Materials), IL, M, 1954) and by D. Parravano et al (Ref. 2: Khemosorbtsiya i kataliz na okisnykh poluprovodnikakh (Chemisorption and Catalysis on Oxide Semiconductors), Sb. Kataliz. Elektronnyye yavleniya (Coll. Catalysis. Electronic Phenomena), IL, M, 1958) at temperatures below 200°C. The samples studied by the authors have a length and diameter of ab-

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Electroconductivity of the system...

out 10 mm. They are prepared by impregnating finely-powdered nickel oxide obtained from the thermal decomposition of nickel nitrate with a concentrated solution of lithium acetate, this technique being similar to the one described by Kh. Valeyev et al (Ref. 4: Tr. Gos. issled. elektrokranicheskogo in-ta (Works of the State Research Electro-ceramic Institute), vyp. 2, 1957, p. 20). Next the residue is evaporated to dryness; fired in a corundum crucible; aged for 1 hour at 1200°C; extruded under a pressure of 1000 kg/cm²; sintered for 1 hour at 1200°C; and then silvered in order to decrease the transitional resistance of the contact surfaces. The conductivity measurements are made on a d.c. bridge, with a voltage drop of about 1 V for the specimen; this procedure was adopted in view of the subsequent use of the material for the oxygen electrode of a fuel cell. It is deduced from the graphs given that the specific conductivity throughout the studied temperature range has a positive temperature coefficient irrespective of the sample composition. According to these data the increase in the specific conductivity with rising temperature is especially pronounced for low lithia content (0.1 - 0.5 mol. %); above the level of 5 mol.% Li₂O there is less variation of this

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Electroconductivity of the system...

coefficient with increasing temperature. The results obtained from conductivity measurements at 20°C and 200°C are given graphically, from which it is evident that the conductivity markedly increases as the proportion of NiO to Li₂O in the specimen decreases at the former temperature. Thus, at a concentration of 20 mol.% Li₂O the conductivity is 10⁶ times higher than is the case with a sample consisting purely of nickel oxide. Since the specimens were prepared by sintering compressed powder, it was necessary to ascertain first the dependence of the conductivity at room temperature on the sintering temperature: this was done by sintering samples with a content of 5 mol.% Li₂O at various temperatures and measuring their conductivity. It was hence established that sample conductivity reaches a maximum at 1100 - 1200°C, so that all specimens utilized in the foregoing tests were accordingly sintered at this temperature. There are 2 figures, 1 table and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: E. Gorin, H.L. Recht, Fuel Cells. Mechanical Engineering, March 1959, 63 Chemical Engineering Progress, 1959, 8, p 51; P.I. Fensham, Solid Solutions of Lithium Oxide in Nickel

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Electroconductivity of the system...

S/200/61/000/006/002/004
D206/D303

Oxide. J. Amer. Chem. Soc. 76, 4, 1954, 969.

ASSOCIATION: Ural'skiy filial AN SSSR (Urals Branch AS USSR)
Sverdlovsk

SUBMITTED: July 12, 1960

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Card 4/4

TRUNOV, A.M.; STEPANOV, G.K.

Cathodic polarization of a porous silver electrode in molten
carbonates. Trudy Inst. elektrokhim. UFAN SSSR no.3:69-76
'62. (MIRA 16:6)

(Electrodes, Silver)
(Polarisation(Electricity))
(Carbonates)

RODIGINA, E.N.; STEPANOV, G.K.

Corrosion of silver in molten alkali metal carbonates. Trudy
Inst. elektrokhim. UFAN SSSR no.3:77-82 '62.

(MIRA 16:6)

(Silver—Corrosion)
(Alkali metal carbonates)

STEPANOV, G.K.; KLEVTSOV, I.P.

Determination of the specific surface and average diameter
of powder particles in a steady regime of gas filtration.
Trudy Inst. elektrokhim. UFAN SSSR no.3:179-184, '62.

(MIRA 16:6)

(Porous materials—Permeability)

STEPANOV, G.K.; KLEVTSOV, L.P.

Apparatus for the determination of hydraulic characteristics
of gas diffusion electrodes. Trudy Inst. elektrokhim. UFAN
SSSR no.3:185-189 '62. (MIRA 16:6)

(Electrodes) (Porous materials—Permeability)

STEPANOV, G.K.; TRUNOV, A.M.

Behavior of a platinum electrode in fused carbonates when a mixture of oxygen and carbon dioxide is flowing around it.
Dokl. AN SSSR 142 no.4:866-869 F '62. (MIRA 15:2)

1. Institut elektrokhemii Ural'skogo filiala AN SSSR.
Predstavleno akademikom A.N.Frumkinym.
(Electrodes, Platinum)
(Electrochemistry)

ARKHIPOV, G.G.; TRUNOV, A.M.; STEPANOV, G.K.

Discharge of a carbonate ion on a platinum anode. Trudy Inst.
elektrokhim. UPAN SSSR no. 4:41-45 '63. (MIRA 17:6)

L 16607-65 ENT(m)/T AFWL RWH
ACCESSION NR: AT4048676

S/2631/64/000/005/0075/0077

AUTHOR: Arkhipov, G. G.; Stepanov, G. K.

TITLE: Anodic polarization of carbon electrodes in carbonate melts

B+1

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy*, no. 5, 1964.
Elektrokhiimiya rasplavlenny*kh solevy*kh i tverdy*kh elektrolitov (Electrochemistry of
fused salt and solid electrolytes), 75-77

TOPIC TAGS: carbon electrode, electrode polarization, carbonate electrolyte, anode
polarization, fused salt electrolyte

ABSTRACT: Since previous work covers only the qualitative aspects of the electrochem-
ical combustion of carbon, the authors undertook a quantitative study of anode polarization
in a eutectic melt of potassium, sodium and lithium carbonates in the temperature range
of 500-900C. As the cell they used an alundum crucible with a 25 cm² platinum plate
cathode around a smaller crucible with an immersed carbon anode and containing a still
smaller crucible with the reference electrode. All three crucibles were filled with a
eutectic melt of the three carbonates. The electrochemical contact was achieved through
the crucible walls and \cap -shaped shunts of porous MgO acting as a sort of diaphragm.
The spectral carbon rod was tightly fitted into an alundum tube, attached to a platinum

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L 16607-65

ACCESSION NR: AT4048676

terminal and the open top of this alundum tube was potted with a MgO/waterglass mixture. The anode area was 2.5 cm². The reference electrode consisted of a platinum capillary (1.5 mm in diam.) welded to a nichrome tube 5 mm in diam. through which an O₂ + CO₂ mixture was blown. The reference electrode was surrounded by an alundum tube (12 mm in diam.) to avoid contact of the gas mixture with the anode space. The temperature was maintained by a controlled electric furnace. As soon as the anode reached a constant potential, it was measured at the moment of disconnection, using a loop oscillograph (H-102). Polarization curves were plotted for each 100C interval between 500 and 900C. At 600C gases were sampled and analyzed at current densities between 50 and 500 ma/cm². The gas composition changed only slightly at varying current densities. The CO₃--ion discharge at 600C at the carbon electrode follows the equation $C + 2CO_3^{--} \rightarrow 3CO_2 + (4e)$.
Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Institut elektrokhimii, Ural'skiy filial AN SSSR (Institute of Electro-chemistry, Urals Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: GC, EM

NO REF SOV: 005

OTHER: 007

Card 2/2

Surface tension of molten carbonate systems, Part 1: System:
 $\text{Li}_2\text{CO}_3 - \text{K}_2\text{CO}_3 + \text{Li}_2\text{O} - \text{Na}_2\text{CO}_3$, $\text{Na}_2\text{O} - \text{K}_2\text{CO}_3$. Tr. Izv. Akad. Nauk SSSR
elektrokhim. UFAN SSSR no. 5:61-68 1974.

Surface tension of molten carbonate systems, Part 2: System:
 $\text{Li}_2\text{CO}_3 - \text{Na}_2\text{CO}_3 - \text{K}_2\text{CO}_3$. Ibid.: 69-74

(MIRA 12:2)

GEORGE, M., I.N.; S. M. S. G. A.; S. M. S. G. A.; S. M. S. G. A.

behavior of EIA-1, EI-55A, EI-135, and EI-137B alloys in fused
carbonates. Trudy Inst. elektrokhim. UPM SSSR no. 5: 198-207, 1964.
USSR, 1965

ARENHPOV, G.S.; STEPANOV, G.K.

Anodic polarization of a carbon electrode in fused carbonates.
Trudy Inst. elektrokhim. UFAN SSSR no.5:75-77 '64.

(MIRA 18:2)

L 52239-65 EFF(c)/EPT(r)-2/EPA(s)-2/ENT(m)/ENP(b)/ENP(t) IEP(c) WW/JW/JD/JG :
ACCESSION NR: AR5019132 UR/0137/65/000/007/A007/A007

SOURCE: Ref. zh. Metallurgiya, Abs. 7A45

AUTHOR: Moiseyev, G. K.; Stepanov, G. K.

TITLE: The dependence of the surface tension of salt melts on the bond energy between ions

CITED SOURCE: Tr. In-ta elektrokhimii. Ural'skiy fil. AN SSSR, vyp. 6, 1965, 47-56

TOPIC TAGS: surface tension, bond energy, liquid metal, chemical bonding, inorganic anion

TRANSLATION: Calculations have been made of the energies of the pseudolattice E_3 , the constants A' , analogous in meaning to Madelung's constant for a crystal, and the energies of the single bonds E_1 , for melts of the salts of fluorides, chlorides, nitrates, sulfates, and caustic carbonates. For halides, the value of A' varies from 1.53 to 1.58 while for carbonates and sulfates it varies within the interval 2.2 - 2.4. Starting from these values it can be calculated that melts of caustic chlorides and fluorides of metals have a similar structure. Sulfates

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L 62939-65

ACCESSION NR: AR5019132

and carbonates form another group which are close in the structure of their melts. In melts with complex anions (nitrates) a considerable amount of covalent bonds is formed. With an increase in the magnitude of the bond energy, the surface tension at the melting temperature increases in each group of salts with a common anion, in the order: cesium²¹-rubidium²¹-potassium²¹-sodium²¹-lithium²¹. For lithium nitrate, the surface tension is not proportional to the energy of a single bond. Empirical dependences of the surface tension on the energy of a single bond were obtained. Orig. art. has: 26 literature titles. G. Svodtseva

SUB CODE: IC, MM

ENCL: 00

Card 2/2

(A) L 10686-66 EWT(m)/ETC/ENG(m)/T/EWP(t)/EWP(b) DS/JD

ACC NR: AT5028243 SOURCE CODE: UR/2631/65/000/006/0075/0080

AUTHOR: Arkhipov, G.G.; Stepanov, G.K.

ORG: Institute of Electrochemistry, Ural Branch, Academy of Sciences, SSSR
(Akademiya nauk SSSR, Ural'skiy filial, Institut elektrokhimii)

TITLE: Anodic polarization of a platinum electrode bathed with hydrogen in a carbonate melt

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 6, 1965.
Elektrokhiymiya rasplavlennykh solevykh i tverdykh elektrolitov (Elektrochemistry of fused salts and solid electrolytes), 75-80

TOPIC TAGS: platinum, electrode potential, carbonate, anode polarization, porous metal, gas pressure, hydrogen

ABSTRACT: Data are presented on the anodic polarization of a smooth and porous platinum electrode bathed with hydrogen in an Na, K, and Li carbonate melt of eutectic composition at 500 - 700C in the 10^{-5} - 1 A/cm^2 range of current densities. The effect of gas pressure on the shape of the polarization curve for a two-layer gas-diffusion platinum electrode is determined. It is shown that when the porous

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ACC NR: AT5028243

electrode operates without evolution of gases into the electrolyte, the optimum pressure prevails; when it operates with a partial discharge of gases into the electrolyte, the electrode operates more actively and the optimum pressure is also observed. An explanation is given for the experimentally observed deviation of the potential of the cell $\text{Pt, H}_2 / \text{CO}_3^{2-} / \text{O}_2 + \text{CO}_2, \text{Pt}$ from the calculated thermodynamic values. Orig. art. has: 4 figures.

SUB CODE: 07 / SUBM DATE: None / ORIG REF: 003 / OTH REF: 012

HW
Card 2/2

L 10693-66 EWT(m)/ETC/ENG(m)/T/ENP(t)/ENP(b) DS/JD

ACC NR: AT5028244

SOURCE CODE: UR/2631/65/000/006/0081/0085

AUTHOR: Stepanov, G. K.; Trunov, A. M.

ORG: Institute of Electrochemistry, Ural Branch, Academy of Sciences, SSSR
(Akademiya nauk SSSR, Ural'skiy filial, Institut elektrokhimii)

TITLE: Electroreduction of oxygen in molten carbonates

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 6, 1965.
Elektrokhiimiya rasplavlennykh solevykh i tverdykh elektrolitov (Electrochemistry
of fused salts and solid electrolytes), 81-85

TOPIC TAGS: redox reaction, oxygen, carbonate, carbon dioxide, cathode
polarization, *ELECTROCHEMISTRY, GAS ANALYSIS*

ABSTRACT: The relationships governing the dissolution of the oxidizing agent
(oxygen) during the cathodic polarization of a silver gas-diffusion electrode (bathed
by an O₂ + CO₂ gas mixture) were studied by the coulometric method combined
with an analysis of the gases being used. It is found that in an open cell, a substan-
tial transfer of carbon dioxide from the oxygen electrode to the atmosphere with a
decrease in the efficiency of the electrode could take place; this can be excluded to

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L 10693-66

ACC NR: AT5028244

some extent by selecting an optimum composition of the gas mixture or by preventing the process of thermal dissociation. It is shown that during the electroreduction of an $O_2 + CO_2$ mixture, two consecutive processes (the formation of carbonate and oxide ions) take place in molten carbonates. Orig. art. has: 3 figures, 1 table, and 6 formulas.

SUB CODE: 07 / SUBM DATE: None / ORIG REF: 005 / OTH REF: 002

Fused Salts

18

HW
Card 2/2

2

L 9909-66

EWI(e)/EIT(m)/ETC/EWG(m)/EWA(d)/I/EWP(t)/EWP(k)/EWP(z)/EWP(h)

ACC NR: AT5028250

SOURCE CODE: UR/2631/65/000/006/0145/0150 DS/JD

AUTHOR: Klevtsov, L. P.; Stepanov, G. K.

ORG: Institute of Electrochemistry, Ural Branch, Academy of Sciences SSSR (Akademiya nauk SSSR, Ural'skiy filial, Institut elektrokhimii)

TITLE: Study of the structure of finely porous media by capillarometry. Report No. 1.

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 6, 1965. Elektrokhimiya rasplavlennyykh solevykh i tverdykh elektrolitov (Electrochemistry of fused salts and solid electrolytes), 145-150

TOPIC TAGS: porous metal, gas diffusion, electrode

ABSTRACT: The capillarometric method is used to study the structure of finely porous nickel samples. The method is based on the known relation between the pore diameter and pressure of the liquid in the pore, which is written as follows:

$$p = \frac{4 \delta \cos \theta}{d}$$

where p is the pressure, δ the surface tension of the liquid permeating the sample, θ the contact angle, and d the effective pore diameter. Knowing θ and δ , the pore diameter can be calculated by measuring p . The procedure employed in measuring the pressure is described.

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ACC NR: AT5028250

The advantage of the method, which can be used for the study of porous electrodes⁷ in electro-chemistry, is the fact that it permits the study of pore distribution under dynamic conditions very similar to those prevailing in actual electrodes. In addition, it permits measurements without destruction of the sample and is easy to carry out. Orig. art. has: 6 figures and 5 tables.

SUB CODE: 07, 11 / SUBM DATE: none / ORIG REF: 008 / OTH REF: 001

Card

2/2

L 03372-66 FMT(m) T/EMP(L)/MTI IJE(c) DS:DD
 ACC NR: AT6021371 (A) SOURCE CODE: UR/2631/65/000/007/0111/0114

AUTHOR: Stepanov, G. K.; Gaag, V. A. 45
 6-1

ORG: none X

TITLE: Oscillographic measurement of concentration polarization by means of switch-on curves

SOURCE: *AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 7, 1965. Elektrokhiimiya rasplavlennykh solevykh i tverdykh elektrolitov; termodinamika i kinetika elektrodnykh protsessov (Electrochemistry of fused salts and solid electrolytes; thermodynamics and kinetics of electrode processes), 111-114

TOPIC TAGS: electrode, electric polarization

ABSTRACT: A new method of measuring the concentration polarization of current-source electrodes by means of switch-on curves and a graphical method of treating the experimental data are proposed. The electrode under study was subjected to anodic polarization with rising currents developed by the source itself, while the load resistance was decreased. To record the processes occurring at the electrode, two oscillators of a loop oscillograph were employed. One recorded the potential variation with time, and the other the simultaneous change in the strength of the polarizing current. The polarization was measured (relative to a platinum reference electrode bathed by a 1:2 oxygen - carbon dioxide mixture) both at the instant the current was switched on and

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ACC NR: AT6021371

when it was switched off. The concentration polarization for the type of electrode studied was found to be considerable. The proposed method is not theoretically exact because it involves the assumption that the resistance of the portion of the cell constituted by the working electrode and the reference electrode is constant. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 23Aug65/ ORIG REF: 001

09/

Card

2/2/116P

L 36446-66 EWT(m)/T/EWP(t)/ETI IJP(c) WW/JD/JG

ACC NR: AP6018069

(A)

SOURCE CODE: UR/0076/66/040/005/1056/1063

63
62
B

AUTHOR: Moiseyev, G. K.; Stepanov, G. K.

ORG: Institute of Electrochemistry, Ural Affiliate AN SSSR (Institut elektrokhimii Uralskogo filiala AN SSSR)

TITLE: Surface layer in molten mixtures of alkali metal carbonates

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 5, 1966, 1056-1063

TOPIC TAGS: carbonate, alkali metal, sodium compound, potassium compound, lithium compound, surface tension

ABSTRACT: Isotherms of surface tension of melts of mixtures of two and three alkali metal carbonates were measured at 900°C and compositions of the surface layer (concentrations of Li^+ , Na^+ , and K^+ ions) were determined. The purpose of the work was to elucidate the structure of the uppermost layer of the melts of alkali metal mixtures. The ratios of the individual carbonates (Li_2CO_3 , Na_2CO_3 , and K_2CO_3) in melts was varied in a wide range. It was found that the thickness of the uppermost layers is equal to the average molecular dimensions of the carbonates in the respective

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UDC: 621.317.742

L 36446-66

ACC NR: AP6018069

melts. It was also found that the difference between the compositions of the uppermost layer and the bulk depends upon both the magnitude of enrichment of the surface layer in cations and the magnitude of displacement of the maximum of surface concentration of cations from the position corresponding to the composition of the melt's bulk. For binary mixtures, the greatest surface enrichment in cations was observed for the $\text{Li}_2\text{CO}_3\text{-K}_2\text{CO}_3$ system in which the difference in cation dimensions is maximal (0.65 Å). For tertiary systems, surface enrichment in individual cations was found to be proportional to their ratio in the melt's bulk. For various melts, surface concentrations of cations and surface tensions are graphed and tabulated. Orig. art. has: 4 figures, 5 tables and 6 formulas.

SUB CODE: 07/ / SUBM DATE: 18Dec64/ ORIG REF: 009/ OTH REF: 003
//Card 2/2 *JS*

L 7973-66 EWT(m)/ETC/ENG(m)/T/EWP(t)/EWP(b) IJP(c) DS/JD/JG
ACC NR: AP5025084 SOURCE CODE: UR/0364/65/001/010/1304/1307

AUTHOR: Klevtsov, L. P.; Arkhipov, G. G.; Stepanov, G. K.

ORG: Electrochemical Institute of the Ural Branch AN SSSR (Institut elektrokhimii Ural'skogo filiala Akademii nauk SSSR)

TITLE: The ionization of oxygen on a platinum electrode partially submerged in a molten carbonate electrolyte

SOURCE: Elektrokhiimiya, v. 1, no. 10, 1965, 1304-1307

TOPIC TAGS: gas ionization, oxygen, electrode, platinum, electrolytic cell, carbonate, potassium, sodium, lithium

ABSTRACT: The experiment was carried out in a hermetically sealed cell. The electrode was a platinum cylinder attached to an aluminum holder. A micrometer screw turned by an electric motor with a reducer made it possible to raise the electrode slowly out of the melt (1 mm in 5 min.). The electrode being investigated was polarized as the cathode. The anode was a cylinder of platinized tin with an area of 60 cm², that is, 30 times greater than that of the electrode being

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UDC: 541.135.3

L 7973-66

ACC NR: AP5025084

investigated. The electrolyte was a eutectic mixture of potassium, sodium, and lithium carbonates. The working gas was a mixture of oxygen and carbon dioxide in a 1:2 ratio. The voltage in the cell was set with a potentiometric scheme. Measurements of the current were made every 2.5 min, which corresponded to a displacement of the electrode by 0.5 mm. Experiments were run at 500, 600 and 700 C. The results are exhibited graphically. At 700 C the curves are characterized by a change in the ionization current as a function of the position of the electrode. All the curves can be divided into three sections. The first section, close to horizontal, reflects the residual currents in a completely immersed electrode. The second shows a more or less sharp rise in the ionization current. The third section reflects the limiting value of the ionization current which decreases somewhat as the electrode is lifted out of the electrolyte. A characteristic stepwise rise in the ionization current sets in already as a potential of 0.1 volt. The magnitude of the ionization current is a function of the magnitude of the applied voltage. Analogous curves were obtained at 500 and 600 C. At 500 C, the maximum ionization current is only 3-5 times greater than the residual current. At 600-700 C, the difference between the residual and the max-

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imum current increased by approximately 9-10 times. Another curve shows the ionization current as a function of the temperature, at a constant potential. With an increase in the temperature from 450 to 500 C, the maximum current increases 4 times. A further fourfold increase in the current is attained only by a 100C increase in the temperature. Orig. art. has 5 figures

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001653210001-2

SUB CODE: GC/ SUBM DATE: 28Jun65/ ORIG REF: 002/ OTH REF: 003

Card 3/3

ACC NR: AT7005249

(N)

SOURCE CODE: UR/2631/65/000/008/0113/0118

AUTHOR: Arkhipov, G. G.; Klevtsov, L. P.; Stepanov, G. K.

ORG: none

TITLE: Palladium hydrogen electrode in molten carbonates

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 8, 1966. Elektrokhiimiya rasplavlennykh solevykh i tverdykh elektrolitov; fiziko-khimicheskiye svoystva elektrolitov i elektrodnyye protsessy (Electrochemistry of fused salts and solid electrolytes; physicochemical properties of electrolytes and electrode processes), 113-118

TOPIC TAGS: palladium, gas diffusion, hydrogen, carbonate, electric polarisation

ABSTRACT: The behavior of nonporous gas-diffusion hydrogen electrodes of palladium in a molten carbonate electrolyte was studied by determining the dependence of the electrochemical efficiency on the thickness of the electrode wall, temperature, and pressure. Anodic polarization curves showed that a 250 μ thick palladium electrode polarizes most strongly at 500°, but that it works satisfactorily at higher temperatures, and at a polarization of 200-300 mV withstands loads of 600-800 mA/cm². The current characteristics of the electrode improve with increasing hydrogen pressure. The results obtained are shown to be in good agreement with the following equation describing the diffusion of hydrogen through nonporous metallic walls:

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$$J = K \cdot \frac{1}{d} \cdot \sqrt{\frac{p}{T}} \cdot e^{-\frac{E_0}{RT}}$$

where J is the diffusion stream, d the thickness of the metal layer, E_0 the heat of activation of diffusion, p the pressure, T the temperature, R the gas constant, and K a constant dependent on the nature of the metal. Orig. art. has: 4 figures.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 006

Cord 2/2

Stepanov, G. M.

AID P - 981

Subject : USSR/Engineering

Card 1/1 Pub. 28 - 4/9

Authors : Stepanov, G. M. and Starkov, I. V.

Title : Standarization of electric power consumption for deep well oil pumping

Periodical : Energ. byul., #10, 18-21, 0 1954

Abstract : Three semi-empirical formulas for determination of kwhr consumption per one ton of oil in deep well oil pumping are analysed on the basis of average observed data from many operating oil fields. The formulae are found not quite satisfactory for practical use in view of the complications involved in the determination of the correction coefficients. One chart and 5 Russian references (1949-54).

Institution : None

Submitted : No date

AUTHOR: Stepanov, G.M.; Ginzburg, I.I. 90-58-7-1/8

TITLE: Some Methods of Standardizing Electric Power Consumption in Depth-Pumping Oil Production (O nekotorykh metodakh normirovaniya elektropotrebleniya pri glubinnozasosnoy dobyche nefti)

PERIODICAL: Energeticheskiy Byulleten', 1958, Nr 7, pp 1-7 (USSR)

ABSTRACT: The authors discuss K.N. Kulizade's article on methods of standardizing electric power consumption in depth-pumping oil production; agree with his formula for calculating the specific electric power consumption but cannot accept his conception of k - the factor covering the variable component of the power consumed by the pump in relation to the size of the useful load. Kulizade regards this as a constant depending only on the type of pump, whereas the authors state that k also varies from field to field depending on the working conditions and can not be generalized. As an illustration of the errors possible by this method, they compare Kulizade's experimental findings with the results worked out from his formula (Tables 1 and 2). Some inaccuracies in the experimental data are pointed out. The method of calculating the specific power consumption employed in the offices of Orgenergoneft' and O.P. Shishkin's

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90-58-7-1/8

Some Methods of Standardizing Electric Power Consumption in Depth-Pumping
Oil Production

empirical formula, as mentioned by Kulizade, are discussed and their degree of error compared (Tables 3, 6, and 7). Neither of these two methods are founded on accurate study of a sufficient number of cases and, in fact, the most accurate calculation of the specific power consumption can at present be made by a graph. There are 7 tables, 1 graph and 2 Soviet references.

Card 2/2

1. Electric power—Consumption
2. Oil industry—Applications
3. Electric power—Standards

SEMLNOV, B.F.; KARASEVA, P.S.; REZEPOVA, A.I.; STEPANOV, G.M.

Experimental study of a tissue vaccine against tick-borne encephalitis.
Vop. virus. 6 no.6:716-720 N-D '61. (MIRA 15:2)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.
(ENCEPHALITIS) (TICKS AS CARRIERS OF DISEASE)
(VACCINES)

ANDZHAPARIDZE, O.G.; ROZINA, E.E.; STEPANOV, G.M.

Serum therapy for monkeys inoculated with the poliomyelitis virus in the spinal cord. Trudy Mosk. nauch.-issl. inst. virus. prep. 2:49-56 '61.

Serum therapy for monkeys inoculated intramuscularly with the poliomyelitis virus. Ibid.:57-64 '61. (MIRA 17:1)

BOGOMOLOVA, N.N.; SEMENOV, B.F.; STEPANOV, G.M.

Evaluation of the usefulness of different tissue cultures
for the titration of the tick-borne encephalitis virus.
Trudy Mosk. nauch.-issl. inst. virus. prep. 2:158-161 '61.
(MIFA 17:1)

SEMENOV, B.F.; BOGOMOLOVA, N.N.; STEPANOV, G.M.

Studying the multiplication of viruses of the tick-borne encephalitis group in chicken fibroblast cultures. Vop. virus. 7 no.2:243 Mr-Apr '62. (MIRA 15:5)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.
(ENCEPHALITIS) (TISSUE CULTURE)

SEMENOV, B.F.; STEFANOV, G.M.; ROZINA, E.E.; GENDON, Yu.Z.; CHERNOS, V.I.;
KHESIN, Ya.Ye.

Spontaneous viruses in white mice similar to tick-borne encephalitis
viruses. Vop. virus. 9 no.2:169-173 Mr-Apr '64. (MIRA 17:12)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.

STEPANOV, G.N., inzh., red.; PETROVA, V.V., red.izd-va; NAUMOVA, G.D.,
tekhn.red.

[Instructions for using reinforced-concrete and metal storage
tanks for petroleum and petroleum products] Ukazaniia po prim-
neniiu zhelezobetonnykh i metallicheskiikh rezervuarov dlia khra-
neniia nefti i nefteproduktov, SN 90-60. Moskva, Gos.izd-vo lit-ry
po stroit., arkhitekt. i stroit.materialam, 1960. 13 p.

(MIRA 13:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva.

(Tanks)

STEPANOV, G.N., inzh., red.; KAMERSHTEYN, A.G., kand. tekhn. nauk,
red.; IFTINKA, G.A., red.; RODIONOVA, V.M., tekhn. red.

[Construction specifications and regulations] Stroitel'-
nye normy i pravila. Moskva, Gosstroizdat. Pt.2. Sec.D.
ch.10.[Pipelines] Magistral'nye truboprovody; normy pro-
ektirovaniia (SNIP II-D. 10-62). 1963. 29 p.
(MIRA 16:10)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po
delam stroitel'stva. 2. Gosudarstvennyy komitet po delam
stroitel'stva SSSR (for Stepanov). 3. Vsesoyuznyy nauchno-
issledovatel'skiy institut po stroitel'stvu magistral'nykh
truboprovodov (for Kamershteyn).
(Pipelines)

STEPANOV, G.N., inzh., red.; RATTI, Yu.V., inzh., red.

[Construction specifications and regulations] Stroitel'nye noi v i pravila. Moskva. Gosstroizdat. Pt.2. Sec.G. ch.14. [Industrial steel pipelines subject to pressure up to 100 kGs/cm² inclusively; design specifications] Tekhnologicheskie stal'nye truboprovody s uslovnym darleniem do 100 kGs/cm² vkluchitel'no; normy proektirovaniia (SNiP II-G. 14-62). 1963. 16 p. (MIRA 17:6)

1. Russia (1923-- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Stepanov). 3. Gosudarstvennyy soyuznyy institut po proyektirovaniyu predpriyatiy iskusstvennogo zhidkogo topliva i gaza (for Ratti).

STEPANOV, G. N., FARBER, Yu. D., PEKARSKIY, D. Ye.

"THE VUS-21 AUXILIARY REMOTELY SUPPLIED REPEATER STATION"

Vestnik Svyazi, No 8, 1952, pp 3-5

Translation M-1284, 8 Nov 56

STEFANOV, G. K. Engineer

CHEREMETEV, A. V. Cand, Tech. Sci.

BORODZYUK, G. G. Cand. Tech. Sci.

"EQUIPMENT OF A 24-CHANNEL MULTIPLEX TELEPHONE SYSTEM
USING SYMMETRICAL LINE CABLES (K-24)".

Vestnik Svyazi, No. 6, 1953, pp 3-6

Translation M-12'7, 30 Oct 56.

STEPANOV, G.N., inzhener, laureat Stalinskoy premii.

The design of amplifier equipment for stations operated by remote control. Vest.sviazi 16 no.2:12-14 P '56. (MIRA 9:7)
(Amplifiers, Electron-tube) (Remote control)

СТЕПАНОВ, Г. Н.

STATIONS & COMMUNICATION SYSTEMS

"Type V-12-2 Apparatus for High Frequency Telephony," by L. Ye. Yontov, Chief Engineer of the SKB Plant of the Ministry of Radio Engineering Industry, U.S.S.R., G. N. Stepanov, Chief of the Scientific Research Laboratory, S. M. Kovalev, Chief of the Plant Laboratory and N. Ye. Baskakov, Chief Designer of the Plant, all of the Ministry of Radio Engineering Industry, U.S.S.R. Vestnik Svyazi, No 6, June 1957, pp 7-9 (Part I) and No 8, August 1957, pp 3-7.

Analysis of the technical data, circuits, and structural desing of type V-12-2 apparatus, which is a modernization of the V-12 apparatus, used for multiplexing telephone conversations over aerial lines.

Card 1/1

- 37 -

IONTOV, L.Ye.; STEPANOV, G.M.; KOVALEV, S.M.; BASKAKOV, H.Ye.

Type V-12-2 high-frequency telephone equipment. Vest.sviazi 17
no.6:7-9 Ja '57. (PURA 10:8)

1.Glavnyy inzhener Spetsial'nogo konstruktorskogo byuro zavoda
Ministerstva radiotekhnicheskoy promyshlennosti (for Iontov) 2.Nachal'nik
laboratorii Nauchno-issledovatel'skogo instituta Ministerstva radiotekh-
nicheskoy promyshlennosti (for Stepanov) 3.Nachal'nik laboratorii zavoda
Ministerstva radiotekhnicheskoy promyshlennosti (for Kovalev) 4.Glavnyy
konstruktor zavoda Ministerstva radiotekhnicheskoy promyshlennosti (for
Baskakov)

(Telephone--Apparatus and supplies)

IONTOV, L.Ye.; STEPANOV, G.N.; KOVALEV, S.M.; BASKAKOV, N.Ye.

Type V-12-2 high-frequency telephone equipment. Vest.sviazi 17
no.8:3-7 Ag '57. (MIRA 10:10)

- 1.Glavnyy inzhener spetsial'nogo konstruktorskogo byuro zavoda Ministerstva radiotekhnicheskoy promyshlennosti (for Iontov).
- 2.Nachal'nik laboratorii nauchno-issledovatel'skogo instituta Ministerstva radiotekhnicheskoy promyshlennosti (for Stepanov).
- 3.Nachal'nik laboratorii zavoda Ministerstva radiotekhnicheskoy promyshlennosti (for Kovalev).
- 4.Glavnyy konstruktor zavoda Ministerstva radiotekhnicheskoy promyshlennosti (for Baskakov)
(Telephone--Equipment and supplies)

IONTOV, L.Ye.; KOVALEV, S.M.; STEPANOV, G.N.; BASKAKOV, N.Ye.; PETROVA,
V.Ye., red.;

[New 12-channel high-frequency telephone equipment using V-12-2
overhead communication lines] Novaia 12-kanal'naya apparatura
VCh telefonirovaniia po vozdushnym liniiam sviazi tipa V-12-2.
Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1959.
140 p. (MIRA 13:4)
(Electric lines--Overhead) (Telephone, Automatic)

BORODZYUK, G.G.; STEPANOV, G.N.; DRIATSKIY, N.M.; IONTOV, L.Ye.; KOVALEV, S.M.; BLOKHIN, A.S.; DVORTSOV, L.D.; LUGOVSKOY, N.Ye.; MERKULOV, A.G.; SMIRNOV, B.P.; ROGINSKIY, E.M.; BALAN-IL'YEVSKAYA, I.A.; IZRAILIT, S.G.; GRANAT, M.B.; ZARIN, S.A., otv.red.; FEDOROVSKAYA, L.N., red.; MARKOCH, K.G., tekhn.red.

[Multichannel apparatus for high-voltage telephony on overhead lines and cables] Mnogokanal'naya apparatura vysokochastotnogo telefonirovaniya po vozdushnym i kabel'nym liniyam svyazi. Moskva, Gos.izd-vo lit-ry po voprosam svyazi i radio, 1959. 511 p.

(MIRA 14:1)

(Telephone--Equipment and supplies)

SOV/111-59-2-7/27

6(7)

AUTHOR: Stepanov, G.N., Engineer

TITLE: A 60-Channel Apparatus for High-Frequency Telephony on Balanced Cable Lines (Type K-60) (60-Kanal'naya apparatura vysokochastotnogo telefonirovaniya po simmetrichnym kabel'nym liniyam (tipa K-60))

PERIODICAL: Vestnik svyazi, 1959, Nr 2, pp 8-10 (USSR)

ABSTRACT: The article describes the technical specifications of the K-60 apparatus, and the various components that make it up. The K-60 is intended for use in multiplexing inter-city telephone cable lines. As a rule it would be used for organizing multichannel high-frequency telephone communications along MKSB-60 type cable, with either four or seven "quads" (quadruplex core), and correspondingly 5 or 6 (diameter - 0.9 mm) conductor. for transmission of signals on the condition of repeating stations. The K-60 may also be used for multiplexing RRL lines with up to 240-300 channels.

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The K-60 is intended for operation on a four-conductor,

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A 60-Channel Apparatus for High-Frequency Telephony on Balanced Cable Lines

two-cable system. For auxiliary communications between manned and unmanned repeating stations the K-60 system uses phantom circuits, formed in the high-frequency "quads" of the cable. The present system, using up to 20 signals, is, however, too complex, and the author states that it will have to be simplified to only 2 signals. Characteristics and specifications are tabulated. The K-60 contains 3 types of intermediate line amplifiers, 1 without AVC, 1 with single-frequency AVC, and 1 with three-frequency AVC. The first is intended for use in unmanned repeating stations (NUP), and includes an automatic reserve amplifier complex. The author discusses the operation of the circuit. The amplifier with single-frequency AVC is intended for use in manned repeating stations, and has no reserve complex. The circuit contains a heat-compensating circuit with TKP-50 type thermistor. The input tube (pre-amplifier) is a 6Zh9P-Ye, and the intermediate and output stage tubes are 6Zh1P-Ye, chosen to compen-

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A 60-Channel Apparatus for High-Frequency Telephony on Balanced Cable Lines

sate for noise and distortion. The article is to be continued. There are 2 circuit diagrams, 1 table and 2 graphs.

Card 3/3

8(5) APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001653210001-2"

AUTHOR: Stepanov, G.N., Engineer

TITLE: A 60-Channel High-Frequency Telephony Apparatus for Balanced Cable Lines (Type K-60) (60-kanal'naya apparatura vysokochastotnogo telefonirovaniya po simmetrichnym liniyam (tipa K-60))

PERIODICAL: Vestnik svyazi, 1959, Nr 3, pp 24-27 (USSR)

ABSTRACT: This article is a continuation of the description of the K-60 high-frequency telephony apparatus (part 1, Vestnik svyazi, 1959, Nr 2). The amplifier circuit with 3-frequency AVC (Figure 5) is similar in principle to the amplifier with single-frequency AVC, and may be used as a receiver-amplifier at terminal stations without any changes. Compensation and control circuits are indicated and briefly described. Control of variation in damping of the controlling circuits is done through TKP-50 thermistors or a group of resistors. 3-frequency level control (AVC) is available in the K-60, at 248, 16, and 112 kc, but single-frequency control at 248 kc is most commonly used;

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A 60-Channel High-Frequency Telephony Apparatus for Balanced Cable Lines (Type K-60)

level control is thermoelectric. The K-60 includes manual control of the heating current to the amplifier thermistor, as distinct from the K-24 apparatus. Control receivers for the control currents are briefly described. They are identical in circuitry, differing only in the passbands of the narrow-band quartz crystal filter at the inputs, and tuning frequencies of the selective circuits. In order to compensate for over-regulation resulting from surges in level on the line, different types of thermistors are used in the control receivers (TP-2/2), and the amplifiers. The receiver thermistors are enclosed in thermostats. The problem of correction for frequency distortion in the "group channel", and introduction of filters for preventing interference to the K-60 from medium-wave radio stations, is briefly discussed. Frequency conversion in the K-60 at terminal stations, which is in 3 stages - from indi-

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A 60-Channel High-Frequency Telephony Apparatus for Balanced Cable Lines (Type K-60)

vidual channels to a group of 5 12-channel groups, then to the 60-channel group, and finally to the line frequency spectrum - is described and illustrated (Figure 7). A skeleton diagram of the terminal station equipment is shown (Figure 8). Individual channel equipment (not shown) is identical to that of the V-12-2 apparatus (Vestnik svyazi, 1957, Nr 6,8). The author adds several observations on the "group channel" at terminal stations (Figure 8), and the control currents in the channel (at 84.14 kc). Introduction of a control frequency at 411.86 kc in the 60-channel group of the transmitting section, necessary when the K-60 system is operating together with a system of multiplexed coaxial cable or radio-relay lines, is envisaged. The receivers for this control frequency, to be connected at the output of the receiving section of the 60-channel group, will not be included in the K-60 itself. A

Card 3/4

SOV/111-59-3-15/26

A 60-Channel High-Frequency Telephony Apparatus for Balanced Cable Lines (Type K-60)

skeleton diagram of the frequency generating equipment, supplying the necessary carrier and control currents is shown (Figure 9), and briefly described. The basic of the circuit is a 4 kc oscillator with a stability of 1×10^{-6} . All carrier currents are harmonics of 4 kc, or the related frequency of 12 kc. Control currents, except that at 84.14 kc, are obtained by means of mutual conversion of the most convenient carrier frequency. Capacity of the generating equipment is 480 channels, or 8 K-60 systems, i.e. complete multiplexing of a 4-quad cable. A part of the generating equipment can be used in a modernized K-24-2 apparatus, for which purpose the group carrier frequency of 120 kc, and control currents of 64 and 104 kc, not used in the K-60, are available. The article is to be continued. There are 1 circuit diagram, 2 graphs, 2 block diagrams, and 1 figure.

Card 4/4

6 (7)

SOV/111-59-4-6/25

AUTHOR:

Stepanov, G. N., Engineer

TITLE:

A 60-Channel High-Frequency Telephone Equipment With Symmetric Cable Lines (Type K-60) (60-kanal'naya apparatura vysokochastotnogo telefonirovaniya po simmetrichnym kabel'nym liniyam (tipa K-60))

PERIODICAL:

Vestnik svyazi, 1959 Nr 4, pp 3 - 4 (USSR)

ABSTRACT:

This is the last of three articles published in Vestnik svyazi, (1959, Nrs 2 and 3), describing a 60-channel high-frequency telephone unit with symmetric cables. This article deals with the lead-in cable equipment at attended and unattended repeater stations, which provides the fanning-out of long-distance cables, control measurements, switching of single cable pairs, establishing of phantom circuits for communication between operators, and protects the station equipment from over-voltages. This lead-in cable equipment is to be used on all symmetric two-cable lines. At attended repeater stations, the lead-in equipment is mounted in several bays, while it is combined with the repeater equipment in unattended stations.

Card 1/2

SCV/111-59-4-6/25

A 60-Channel High-Frequency Telephone Equipment With Symmetric Cable
Lines

Figure 10 shows the principal circuit arrangement of this lead-in equipment. The required power is supplied by at 450 volts dc cables. Thus, three unattended repeater stations may be supplied in a row from one attended repeater station. Additional power cables may be used in case the main cable must be switched off for repairs. For measuring the cable characteristics, the KIP-2 portable instrument is recommended. The article contains one table in which the different bays of the K-60 equipment are listed. The author states that there has not been enough experience gained in the operation of this equipment. He recommends the selection of 6Zh1P-Ye tubes according to the amount of heater current required, since these tubes have, at 6.3 volts, a current deviation of the nominal 170 milliamps ranging from 166 to 180 milliamps. The deviation of series connections of such tubes should not exceed 2 milliamps for each group. There are 1 circuit diagram and 1 table.

Card 2/2

STEPANOV, G.N., inzh.; PARR, G.K., inzh.; DVORTSOV, L.D., inzh.

Connecting apparatus for multiplexing apparatus of R-60/120 radio
relay systems. Vest. sviazi 24 no.1:7-9 Ja '64. (MIRA 17:3)

STEPANOV, G.P., inzh.

Device for timing the performance of dredge pumps. Transp.
stroil. 9 no.9:57-58 S '59. (MIRA 13:2)
(Dredging machinery) (Automatic timers)

STEPANOV, G.P., inzh.

Strengthening precast reinforced concrete roof beams with a span
of 12 m. Prom.stroi. 40 no.8:31-33 '62. (MIRA 15:11)
(Beams and girders)

POLYANIN, D.V.; ZOTOV, G.M.; GRYAZNOV, E.A.; MENZHINSKIY, Ye.A.; RUBININ, A.Ye.; CHEBOTAREVA, Ye.D.; ZAKHMATOV, M.I.; OKUNEVA, L.P.; SHMELEV, V.V.; STULOV, A.A.; POKROVSKIY, A.N.; SHIL'DKRUT, V.A.; IVANOV, A.S.; NABOROV, V.B.; FINOGENOV, V.P.; KUR'YEROV, V.G.; KHRAMTSOV, B.A.; BATYGIN, K.S.; BOGDANOV, O.S.; KROTOV, O.K.; GONCHAROV, A.N.; KRESTOV, B.D.; LYUBSKIY, M.S.; SOKOL'NIKOV, G.O.; KAMENSKIY, N.N.; YASHCHENKO, G.I.; SABEL'NIKOV, L.V.; GERCHIKOVA, I.N.; FEDOROV, B.A.; STEPANOV, G.P.; BORODAYEVSKIY, A.D.; INGATUSHCHENKO, S.K.; VARTUMYAN, E.L.; KAPELINSKIY, Yu.N.. red.; MAYOROV, B.V., red.; NABOROV, V.B., red.; SOLODKIN, R.G., red.; DROZDOV, A.G., red.; ROZHCHINA, L., red.; SOLOV'YEVA, G. mladshiy red.; CHEPELEVA, O., tekhn. red.

[The economy of capitalist countries in 1961; economically developed countries] Ekonomika kapitalisticheskikh stran v 1961 godu; ekonomicheski razvitye strany. Pod red. I.U.N. Kapelinskogo. Moskva, Sotsekgiz, 1962. 447 p. (MIRA 16:2)
(Economic history)

LYUBINOV, N.N., prof., doktor ekon. nauk; PIETNEV, E.P., doktor ekon. nauk; SERGEYEV, S.D., dots., kand. ekon. nauk; MEN'SHIKOV, S.M., doktor ekon. nauk; BUZYKIN, Yu.I., kand.ekon.nauk; DYUMULEN, I.I., dots., kand.ekon.nauk; IKONNIKOV, I.S., kand.ekon.nauk; KUZ'MIN, I.A., dots., kand.ekon.nauk; NESTEROV, M.V.; POPOV, A.N., dots., kand.ekon.nauk; SGLOV'YEV, A.A., kand.ekon.nauk; STEPANOV, G.P., dots., kand.ekon.nauk; SHCHETININ, V.D., dots. kand. ekon. nauk; MOGILEVCHIK, A.Ye., red.; SHLENSKAYA, V.A., red.

[Modern international economic relations] Sovremennye mezhdunarodnye ekonomicheskie otnosheniia. Pod red. N.N.Liubimova. Moskva, Izd-vo "Mezhdunarodnye otnosheniia," 1964. 583 p.
(MIRA 17:5)

1. Moscow. Institut mezhdunarodnykh otnosheniy. 2. Predsedatel' Prezidiuma Vsesoyuznoy trgovoy palaty (for Nesterov).

STEPANOV, G.P., inzhener.

All-Union State Standard for steels for electrical engineering.
Vest.elektroprom.27 no.1:75 Ja '56. (MIRA 9:6)
(Steel--Standards)

STEPANOV G.P.

AUTHOR: Semikova, A. I.

103-12-12/12

TITLE: Report on the Scientific Seminar on **Pneumo-Hydraulic Automation**
(Nauchnyy seminar po pnevmo-gidravlicheskoj avtomatike).

PERIODICAL: Avtomatika i Telemekhanika, 1957, Vol. 18, Nr 12,
pp. 1148-1150 (USSR)

ABSTRACT: At the Institute for Automation and Remote Control (IAT) of the Academy of Science of the USSR the All Union Seminar for Automation by hydraulics and compressed air began its activities, which was organized by the Laboratory for Automation by hydraulics and compressed air of the Institute under the direction of Professor Doctor of the Technical Sciences M. A. Ayzerman. The Seminar includes the specialists in the domain of automation by hydraulics and compressed air, who work in the design-offices, in scientific research and educational institutes, and in plants. The purpose of the Seminar is mutual exchange of the investigations conducted in this field in the various organizations of the USSR, and a discussion of new research and elaborations. Conferences of the seminar are held twice a year in the form of two-day sessions. The first of these was held on May 28th-29th 1957. 175 persons took part in it. 24 lectures and communications

Card 1/4

Report on the Scientific Seminar on **Pneumo-Hydraulic Automation**

103-12-12/12

were given. **Stepanov G. P.** lectured on the experimental characteristics of rubberized material membranes, **V. V. Afanas'yev** (KB Tsvermetavtomatika, Moscow) on the investigation of the modifications of active surfaces of texture membranes. **L. A. Zalmanzon** (IAT AN SSSR) gave a talk on the execution of nonlinear transformations in air-pressurized systems with the help of elements of a tube-nozzle type. **I. N. Kichin** (IAT SSSR) reported on the results of the experimental investigation of obliteration in systems of hydraulic automation and on the construction of controlling gear for the upkeep of a minimum stable consumption of operation liquid. **V. N. Dmitriyev** (IAT AN SSSR) reported on the results from the investigation of relays with an element of the nozzle-flap type. **Ye. A. Andreyeva** (IAT AN SSSR) reported on the results of the analytical investigation of the force- and consumption characteristics of elements of the nozzle-flap type. **S. M. Zasedatelev** (NIITeplopriboi, Moscow) reported on the work at the investigation and construction of a new type of apparatus with a force compensation by pressurized air. **N. P. Shumskiy** talked on the investigations

Card 2/4

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PHASE I BOOK EXPIRATION

28(1)

Academiya nauk SSSR. Institut avtomaticheskoy i telemekhanicheskoy avtomatiki. 1st. M. Seminar po pnevmogidravlicheskoy avtomatike. 1st. M.

Sistemy, ustroystva i elementy pnevmogidravlicheskoy avtomatiki (Pneumatic and Hydraulic Circuits, Devices, and Elements of Pneumatic and Hydraulic Automation). Collection of Papers. Moscow, Izdatel'stvo Mashinostroyeniya, 1959. 23 p. Errata slip inserted. 700 copies printed.

Resp. Ed.: **N. A. Ayzenman**, Doctor of Technical Science, Ed. of Publishing House: **A. A. Ial't**, Tech. Ed.: **I. Kichin**.

PURPOSE: This collection of papers is intended for all research workers and engineers in the field of design and construction of pneumatic and hydraulic equipment and automation.

COVERAGE: This collection contains papers read at the Pneumatic and Hydraulic Devices for Automation, May 1959. The collection is divided into the following three parts: 1) newly developed pneumatic and hydraulic circuits; 2) pneumatic and hydraulic devices, including regulating units, transducers, actuating mechanisms, special-purpose and auxiliary equipment and 3) elements of pneumatic and hydraulic devices for automation, such as controlled and uncontrolled diaphragms. No personal files are mentioned, follow General G. Zh. Babitsky.

Andreyeva, Ye. A. Moscow. Calculation of the Static Characteristics of Back-Pressure Type Elements. This paper deals with a theoretical analysis of back-pressure type elements. Flow of fluid, pressure distribution, plates, and general characteristics are discussed.

Shumskiy, N. P. Moscow. Results of Experimental and Investigations of Back-Pressure Type Control Devices.

Bogacheva, A. V. Moscow. High-Velocity Laminar Air Flow in Capillary Channels. This paper discusses air flow in capillary channels at varying pressures. The flow rate is experimentally investigated and results shown graphically. Charts are presented for determining resistance coefficient and flow rate.

Kichin, I. N. Moscow. Nozzle Clogging and Methods of Elimination. The tendency of certain working fluids toward nozzle clogging is examined. Minimum dimensions of nozzle and slit sections at which the fluid flow is not interrupted are determined. Some practical means of combating clogging are presented.

Afanas'yev, V. V. Moscow. On Variations of Effective Fabric Diaphragms. Changes in the magnitude of effective areas of corrugated diaphragms during the stroke are analyzed and their dependence on the design of a KREMA pneumatic regulator is discussed.

Kichin, I. N. and G. P. Sigmanov. Investigation of Characteristics of Diaphragms Used in Sensitive Elements. Characteristics of rubberized-fabric diaphragms and variations in their effective area under the influence of hydraulic pressure are discussed. The amount of hydraulic pressure required to produce a given amount of the stroke of the surrounding medium are investigated. Test results for beryllium-bronze diaphragms are presented.

STEWARD, G. P.

PHASE I BOOK EXPLOITATION

SOV/5295

Avtomaticheskoye regulirovaniye aviadvigateley; sbornik statey
(Automatic Control of Aircraft Engines; Collection of Articles)
No. 2. Moscow, Oborongiz, 1960. 134 p. 3,900 copies printed.

Ed.: Shevyakov, A. A.; Ed.: K. I. Grigorash; Technical Ed.: L. A.
Garnukhina; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers specializing in air-
craft engine design and operation.

COVERAGE: This collection of 7 articles deals with various sys-
tems of aircraft engine control based on pneumatic, hydraulic,
thermal, and electrical phenomena. One of the articles dis-
cusses nuclear reactors as objects to be regulated. No person-
alities are mentioned. References follow each article.

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Real SAR (Sistema avtomaticheskogo regulirovaniya---Automatic
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AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 08/25/2000

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²¹³⁹⁷
S/682/61/000/003/001/008
D234/D302

26.2135

AUTHORS:

Stepanov, G.P., and Kulikov, Yu.N.

TITLE:

Investigating dynamical characteristics of temperature transmitter for a checked air stream

SOURCE:

Avtomaticheskoye regulirovaniye aviadvigately; sbornik statey. no. 3, Moscow, 1961, 5 - 32

TEXT:

The authors consider an analytical method of determining dynamical errors of temperature transmitters (intended for accurate measurements of the temperature of the air stream at the inlet of a gas turbine motor). In formulating the requirements for temperature transmitters it is necessary to know the time constant which they should possess for given absolute errors of measurements. The authors deduce an expression for the constant and give a graph of its dependence on temperature difference and the rate of variation of temperature. The installation used for experimental determination of the time constant, and methods of data processing are described. Theorati-

Card (1/2)

X

Investigating dynamical ...

S/682/61/000/003/001/008
D234/D302

cal expressions for the time constants of sensitive elements for temperature of a checked air stream (having the form of a tube or a rod whose length varies with temperature) are obtained. The mercury vapor transmitter, the thermal cartridge ПТ-9 (PT-9), the dilatometric temperature transmitter with a hydraulic converter and resistance thermometers are described and their experimental and theoretical characteristics compared. It is established that the variation of the time constant with the velocity of air flow and the specific weight of air obeys a hyperbolic law. Inertiality of response of the transmitters increases considerably with the length of the air supply pipe. Transmitters with sensitive elements in the form of aluminum tubes, ribbons, steel wire are found to have the smallest inertiality of response. Four examples of numerical computations of characteristics are given. There are 23 figures, 5 tables and 12 references, 9 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: W.H. McAdams, Heat Transmission, N.Y., McGraw-Hill, 1954; F.H. Carey. The development of the spill flow burner and its control system for gas turbine engine. J. Royal Aeron. Soc. 1954, vol.58, no. 527.

Card 2/2

X

31285

S/124/61/000/010/018/056

D251/D301

26.2/93

AUTHORS:

Zalmanzon, L.A., Mach, Yu.L. and Stepanov, G.P.

TITLE:

Investigating the characteristics of regulators of the ratio of pressures of gases intended for jet engines

PERIODICAL:

Referativnyy zhurnal. Mekhanika, no. 10, 1961, 45, abstract 10 B293 (V sb. Avtomat. regulirovaniye aviadvigateley, no. 1, M., Oborongiz, 1959, 5-73)

TEXT:

A general investigation is carried out on the regulators of pressure to be applied to aero-jet engines. The regulators work on the principle of proportional reduction of pressure. This principle implies that with super-critical discharge in the outlet of the throttlet chamber (the pressure at egress having arbitrary values), the absolute pressure in the pneumatic chamber is proportional to the absolute pressure before entry into the throttle aperture. In regulating the pressure it is necessary to guarantee

Card 1/2

ZALMANZON L.A., MACH YU.L., STEPANOV G.P.
Moscow -

ACC NR: AT6021750

SOURCE CODE: UR/0000/66/000/000/0223/0228

AUTHOR: Stepanov, G. P.

ORG: none

TITLE: Errors caused by thermal inertia in pneumatic reducers and heat exchange with the ambient medium

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 223-228

TOPIC TAGS: pneumatic device, pneumatic control system, pressure regulator, critical pressure, gas flow, gas dynamics

ABSTRACT: The effects of heat exchange on errors in the calculation of the reducer's performance where these calculations are based on equations representing idealized conditions are discussed. Under these conditions, there is no heat exchange with the ambient medium, the flow of air through the throttle is adiabatic, and the condition of the air between the throttles varies isothermally. The following assumptions were made by the author in analyzing the problem: the temperature of the reducer body is uniform, the air temperature in the reducer changes along the longitudinal axis of the reducer, and is uniform radially, and the motion of the air through the reducer is homogeneous. A system of differential equations in terms of thermal processes is set

Card 1/2

ACC NR: AT6021750

up and solved to obtain expressions for errors in pressure computations. For supersonic airflow in both throttles the error is

$$\delta = \sqrt{\frac{T_0}{T_{*x=l}}} - 1$$

where T_0 is the air temperature at the input to the reducer, and $T_{*x=l}$ is the air temperature at the input of the output throttle. If the conditions are subsonic in the input throttle, and supersonic in the output throttle, the error is

$$\delta = \frac{\left(1 + \sqrt{1 + 4B \frac{T_0}{T_{*x=l}}}\right)^{\frac{k}{k-1}} - (1 + \sqrt{1 + 4B})^{\frac{k}{k-1}}}{(1 + \sqrt{1 + 4B})^{\frac{k}{k-1}}}$$

where B is a function of the reducer's parameters. Observations of regulation systems based on proportional pressure reduction revealed serious errors due to sharp temperature T_0 changes, which substantiate the author's contentions. Suggestions for reducing these errors through use of special reducer configurations and air cooling are given. Orig. art. has: 22 formulas, 5 figures.

SUB CODE: 13,14²⁰ SUBM DATE: 03Feb66/ ORIG REF: 001/ OTH REF: 000

Card 2/2

STEPANOV, G.P.

Planning and control of vaccination in children. Zhur. mikrobiol.
epid. i immun. 29 no.11:120-123 N 1958. (MIRA 12:1)

(VACCINES AND VACCINATION,
records for child vacc. (Rus))
(RECORDS, MEDICAL,
same)

YELKIN, I.I.; STEPANOV, G.P.

"Principles of epidemiology" [in English] by J.Taylor, J.Knowelder.
Reviewed by I.I.Elkin, G.P.Stepanov. Zhur.mikrobiol.epid. i immu.
30 no.5:150-155 My '59. (MIRA 12:9)
(EPIDEMIOLOGY) (TAYLOR, J.) (KNOWELDER, J.)

STEPANOV, G.P.

Blame sterilization of Frank's needles in the prevention of viral hepatitis. Zhur.mikrobiol.epid.i immun. 31 no.11:153-156 N '60.
(MIRA 14:6)

1. Iz kafedry epidemiologii I Moskovskogo ordens. Lenina Meditsinskogo instituta imeni Sechenova.

(HYPODERMIC NEEDLES—STERILIZATION)

STEPANOV, G.P.

Seasonal occurrence of viral hepatitis (Botkin's disease).
Zhur.mikrobiol.epid.i immun. 32 no.2:48-53 F '61. (MIRA 14:6)

1. Iz kafedry epidemiologii I Moskovskogo ordena Lenina meditsinskogo imeni Sechenova.
(HEPATITIS, INFECTIOUS) (WEATHER)

STEPANOV, G.P.

Some problems in the epidemiology of epidemic hepatitis (Botkin's disease). Report No.1: Annual disease incidence, Zhur.mikrobiol. epid. i immun. 32 no.4:112-117 Ap '61. (MIRA 14:6)

1. Iz kafedry epidemiologii I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.
(HEPATITIS, INFECTIOUS)

STEPANOV, G.P.

Some problems in the epidemiology of infectious hepatitis. Report No.2:
Territorial incidence. Zhur. mikrobiol. epid. i immun. 32 no.7:25-31
Je '61. (MIRA 15:5)

1. Iz I Moskovskogo ordena Lenina meditsinskogo instituta imeni
Sechenova.

(HEPATITIS, INFECTIOUS)

YELKIN, I.I., prof.; SHATROV, I.I.; STEPANOV, G.P.; KLIMENKO, Ye.P.;
KHROMETSKAYA, T.M.

Reviews. Zhur.mikrobiol., epid. i immun. 42 no.2:150-155 F '65.
(MIRA 18:6)

STEPANOV, G. R.

BC

44

Oil from seeds of *Abutilon* *retrofractum*, G. O. R. STEPANOV (Trud. Inst. Nov. Lkhyan. Selv., 1933, 4, 123-126).—The oil (10-97%) had d_{4}^{20} 0.9106, sp. viscosity at 24° 0.4, Abbe refractometer index 1.47, f.p. 17°, mp. at 100-5, neutralization val. of fatty acids 190-81, average mol. wt. of fatty acids 200-7, I val. 123, I val. of fatty acids 125, glycerides 10-17%. The oil is of the semi-drying type. Ch. Ass.

ABSTRACTS OF LITERATURE CLASSIFICATION

STEPANOV, G. R.
ca

Cultivation of Krynzhys. G. R. Stepanov. *Good Asia and Rubber* (U. S. S. R.) 1960, No. 8, 107-110. Krynzhys was discovered in China in 1941. It is a perennial plant and the roots contain 10% rubber (based on the dry wt. of the plant). This rubber is superior before aging to imported brands, and after aging is close to these. One-yr. plants contained 0.8-2% rubber and 1.6-7.2% resin. The plants could not withstand winter except in central Asia, where it is being cultivated and investigated, and plans for enlarging its cultivation are being projected. R. Z. Kamich

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

28(3);

30V/28-59-4-14/19

AUTHOR: Stepanov, G.R.

TITLE: On Standards for Seeds of Agricultural Plants (O standartakh na semena sel'skokhozyaystvennykh kul'tur)

PERIODICAL: Standartizatsiya, 1959, Nr 4, pp 32-33 (USSR)

ABSTRACT: The existing Soviet standards for seeds of agricultural plants are to be revised during 1959. The author discusses amendments that should be made in the standards, as were suggested by specialists and workers of RTS and kolkhozes at different conferences during 1958. The corresponding standards of the USA are mentioned as an example of correct standardization of seeds, with different standards for different climate and soil conditions.

ASSOCIATION: Ministerstvo sel'skogo khozyaystva SSSR (Ministry of Agriculture of the USSR)

Card 1/1

STEPANOV, G.R.

For proper harvesting and timely stocking of seeds. Zemledelie 6
no.8:44-47 Ag '58.

(Seed production)

(MIRA 12:11)

STEPANOV, G.R., agronom

Good seed is the basis of high crop yields. Zemledelie 7
no.1:66-67 Ja '59. (MIRA 12:1)
(Seed production)